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AUTHOR Marlowe, Mike
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ABSTRACT

The effectiveness of a therapeutic motor development program in increasing the social adjustment and peer acceptance of seven socially isolated fifth grade children was investigated using a single subject experimental design. The program was based on the games analysis model which allows movement games to be designed for individual motoric, social, and emotional needs of the participants. The experimental condition included instruction in the games analysis process: assessment of each child's motor skills in striking, throwing, running, catching, and kicking: and playing games geared to the children's stage of social and motor development. Analysis of pretest-posttest assessment of the peer status of the socially isolated Ss indicated that all seven Ss made median rank position gains in peer acceptance. Through experimental analysis of the single case subjects it was observed that the games analysis training resulted in a controlling effect on task participation and social orientation. (Author)

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The Games Analysis Intervention: A Procedure To Increase The Peer Acceptance and Social Adjustment of Socially Isolated Children

Mike Marlowe, Ph.D.
Special Education Program
Tennessee Technological University

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Running Head: Games Analysis Intervention

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The Games Analysis Intervention: A Procedure To Increase the Peer Acceptance and Social Adjustment of Socially Isolated Children

Socially isolated children have become the subject of increased clinical concern in recent years. Socially isolated children have been defined as those children who are rejected or nonaccepted by their peers (Gottman, Gonso, & Rasmussen, 1975; Gronlund, 1959).

One often observed characteristic of socially isolated children is the absence of a well developed repertoire of social behaviors in play and game situations (Hartup, Glazer, & Charlesworth, 1970). Within a play environment, these children have difficulty in relating in a reciprocally reinforcing manner with their peers (Allen, Hart, Buell, Harris, & Wolf, 1964; O'Connor, 1969, 1972). They are friendless loners who are apparently unable to avail themselves of the joy and satisfaction of socail reciprocity (Kauffman, 1977).

Child development specialists have recognized the importance of satisfying early peer contacts in play situations to children's cognitive, emotional, and social growth (Piaget & Inhelder, 1969; Loy & Ingham, 1973). Given the importance of early play experiences with peers, instruction in play and game skills is a variable that may be used to effect socially isolated children's peer acceptance. There is limited clinical evidence which suggests that socially isolated children are deficient in the motoric abilities and physical skills necessary to relate in a reciprocally reinforcing manner with their peers in play and game activities (Fraleigh, 1956; Haley, 1969; Gruber & Kirkendall, 1974). Cowell (1960) and Cowell

and Ismail (1961) have conducted a number of studies with children involving the relationship between sociometric status and physical abilities. In general, they found that boys who score high on physical measures enjoy high acceptance on sociometric measures while boys who score low on physical measures receive low acceptance on sociometric measures. Clarke and Green (1963) also found significant correlations between social acceptance and motor ability items in ten year old boys.

One intervention identified in the literature to facilitate social interaction and the development of physical skills is the method games analysis. Games analysis developed by Morris (1976) is a process whereby a teacher can structure a game to account for individual motoric differences as well as to promte specific behavioral outcomes such as cooperation.

In games analysis, a game is divided into six categories (players, equipment, movement pattern, organizational pattern, limitations, and purpose) with each category consisting of a number of components. It is possible to provide a wide range of educational experiences by changing the components of one or more categories dependent upon the types of experiences the teacher desires for the children to experience. To manipulate components and/or categories constructively involves both the teacher and students in a "games analysis" process. If specific social, emotional, and motor behaviors are to be enhanced, the games must be designed to account for the current growth and development of the performers. For example, by allowing the students to decide what piece of equipment to use when at bat in a softball "type" of game, the

motoric needs of each student can be accounted for within the game structure. The highest skilled student may choose to use a regulation softball bat and a regulation softball thrown in the traditional manner. On the other hand, the least skilled student may choose to have a large rubber ball rolled toward him and to strike the ball with an oversized underweighted bat. The child who was heretofore labelled as "clumsy" may now be totally included and accepted as an equal since all abilities are considered. Giving children the opportunity to make decisions by manipulating components prevents the game structure from automatically excluding children due to their poor motor skills.

There are three major factors within the games analysis process which contribute to children's social and physical development: (1) allowing children the opportunity to share in decision making about the structures of the games to be played, (2) instructing children in problem solving skills via games analysis strategies, and (3) focusing on children's motor skills and designing games and movement tasks to account for the current stages of motor development by the children. These factors are utilized in structuring games to promote specific social, emotional, and motoric behaviors.

The purpose of the present research was to examine the efficacy of games analysis instruction as method of training socially isolated children in play and game skills for gains in peer acceptance and pro-social behavior. Isolated children were selected based on sociometric measures and were trained in the games analysis process. The impact of games analysis training on their peer acceptance and social behavior

was assessed through pre and post sociometric data and a behavioral assessment tool.

The games analysis training method included three components. First, the children were introduced to the games analysis process. In this component the students were instructed in the problem-solving and decision-making skills skills needed to adapt and design games via the games analysis process. In the second component the instructor utilized his observations of the social, emotional, and motor skills of the children to design games for the children which accounted for their current stages of development in these areas. In the final component the children modified these instructor designed games via the games analysis process as necessary to meet the specific social, emotional, and/or motoric needs of an individual or a group of individuals.

In addition to collecting sociometric data, behavioral observations were made during the games sessions. Two types of behavior were coded, task participation and social orientation. Task participation referred to whether or not the child was participating in playground activity. Social orientation referred to the type of peer-oriented behavior which the child was exhibiting. There were four mutually exclusive categories to code the behavior: (a) peer oriented/supportive, (b) uncommunicative/ignoring, (c) uncooperative/rejecting, and (d) other, that is, behavior in response to outside noise or distraction.

An A-B-A-B single subject reversal design was employed to assess the effects of the games analysis training on task participation and social orientation. During the A phases (baseline) traditional games

with regulation rules were played. In the B phases (treatment) the games played were adapted and designed via the games analysis process by the instructor and children. The A1 and A2 phases involved one week each while the B1 phase lasted for two weeks and the B2 phase lasted for one week.

It was expected that the isolated children trained in the games analysis process would gain in sociometric status from pre- to post-training. On the behavioral observation data, it was expected that children's positive social behavior would increase and negative social behavior would decrease during treatment phases when the games the children played were adapted and designed via the games analysis process.

Method

Subjects

The subjects for this study were 14 fifth grade public elementary school students. Nine of the subjects were ten years old and five subjects were 11 years of age. Eight of the subjects were males of whom four were black, three were white, and one was American Indian. Six of the subjects were female of whom three were black and three were white.

Pretraining Sociometric Assessment

A roster-and-rating sociometric questionnaire was administered in each of three fifth grade classrooms by the researcher who introduced himself as someone who was interested in learning about how children play together in school. Children rated each other in answer to the

question, "How much do you like to play with _____ at school?" The rating scale consisted of five points with 1 being "I don't like to" and 5 being "I like to a lot." Children were taught how to use the scale and examples of play situations in school were suggested. Children were provided with five point scales with faces above each point ranging from a frown to a happy face.

The roster-and-rating sociometric questionnaire has been found to correlate highly with peer-nomination measures (Justman & Wrightstone, 1951; Young, 1947); it has two particularly attractive features compared with the peer nomination sociometric measure. First, the classroom roster decreases the likelihood of a person not being chosen because he or she was momentarily forgotten. Second, the method provides an indication of the child's acceptance by all of the group members since each child is rated by all of his or her classmates.

The "play with" sociometric questionnaire was administered to assess the peer acceptance of the fifth grade children. One measure was obtained for each child from the sociometric questionnaire: a "play" rating based on the average rating received from other children. For the purposes of this study measures were based on same-sex rating or nominations since fifth grade children typically give low ratings to opposite-sex peers (Criswell, 1939).

Selection of Subjects

Selection of least preferred children (social isolates) and seven other participants was based on the mean ratings received from classmates on the "play with" sociometric measure. The two least preferred children

of each sex in each of the three fifth grade classrooms were grouped together for a total of 12 children. Seven of these children were chosen randomly for the study by shuffling cards containing their names. Moderately preferred peers were selected to form a second group for the study. Seven of the third through eighth most frequently preferred children of the same sex as the isolated children were randomly chosen from the three classrooms as participants for the games sessions by shuffling cards containing their names. Selection of subjects resulted in seven moderately preferred children and seven least preferred children.

Games and Materials

Regulation softball, kickball, basketball, and volleyball were played during the baseline phases. During the treatment phases these movement games were changed and adapted via the games analysis process by the instructor and/or students to meet the individual social, emotional, and motoric needs of the games participants.

The variety of developmental motor equipment used in the study was included to reflect the individual motor and social needs of the children. Equipment used by the children in various games played were:

1. Hula hoops,
2. Bean bags,
3. Playground balls (various diameters),
4. Soccer balls,
5. Volleyballs, nets, and ropes,
6. Beachballs (various diameters),

7. Nerfballs,
8. Plastic balls,
9. Softballs (various colors),
10. Whiffle balls,
11. Softball bats, bases, and gloves,
12. Plastic bats,
13. Tennis rackets,
14. Batting tee,
15. Basketballs and basketball goals.

Procedure

Two weeks after the pretraining sociometric assessment the children were taken out of their classrooms to participate in the games sessions. These sessions occurred on the school playground, lasted for thirty minutes, and occurred daily for a five week period. The instructor told the children that he was interested in trying out some games. The observer, a female graduate student, was introduced as someone who was also interested in the games and would keep track of the time.

The first week the children played regulation movement games, e.g., softball. A high incidence of social pathology was displayed by the games participants due to the designs of the regulation games. For example, when regulation softball was played successfully striking, catching, and throwing a softball proved to be beyond the motor skills of several isolated children. Isolated children striking out and committing fielding errors were subject to taunts and name-calling by

their teammates and members of the opposing team. In addition, a high incidence of inappropriate social behavior occurred while the batting team was standing around and waiting their individual turns to bat. Similarly, uncommunicative behaviors occurred in the field. One isolated child positioned herself in foul territory outside the third baseline and made no effort to field balls in fair play. Another child misplayed a fly ball and laid on the ground feigning an injury to cover up his miscue.

Social problems attended the playing of regulation basketball, volleyball, and kickball as well. Many of the children were deficient in performing the motor skills required, and their failure engendered uncommunicative and uncooperative behaviors.

During the baseline phases, the instructor refereed and kept the score of the games. He mediated disputes between players and encouraged the players to exhibit good sportsmanship.

Instruction in games analysis training began prior to the second week of games sessions. The instructor stressed the importance of adapting games to meet the skill levels of all the participants.

Games analysis training was instituted by explaining to the children that any game they play is composed of six categories and that within each category are a number of components. The game of softball was then dissected by placing its parts in a games analysis grid drawn on a blackboard. This was followed up by asking the students how they could change the game of softball by manipulating several of the components. Suggestions by the children which met group approval were

(1) allowing each batter to choose the type striking implement (e.g., tennis racket, softball bat) and type ball (e.g., 12" diameter rubber ball, softball) to use when at bat, and (2) limiting each team to only two minutes of batting time per inning. Incorporating the children's suggestions, the teacher designed the following game for the children.

Insert Figure 1 about here

The limitations category describes this game quite adequately. By allowing each batter to choose what piece of equipment to use when at bat all of the children were successful in striking the ball. In addition, fielding errors were reduced considerably. For example, instead of having to field a ground ball and throw accurately to first base, now the children simply had to stand inside their hoop and catch a ball tossed by a teammate positioned nearby. Emotional outbursts over batting and fielding miscues were eliminated by these game design changes.

The uncommunicative social behavior that had been exhibited by players standing around waiting their turn to bat was eliminated. By requiring all of the batting teammates to run through the hoop the movement time was increased for the batting team. Likewise, uncommunicative behavior in the field was reduced by requiring all of the fielders to perform a specific task on each fielding play. Finally, by mandating there was a time limit on batting, the kinds of social sanctions that had resulted when one team stayed in field for the majority of the game

were eliminated.

The remainder of weeks two and three was spent playing various games designed via the games analysis process. The children returned to playing traditional games during the fourth week, and in the fifth week the games played were again designed via the games analysis process.

Behavioral Assessment

The playground behavior of each socially isolated child was observed and coded every tenth second for 18 consecutive ten second intervals on a daily basis for 22 games sessions. Two types of behavior were coded each time data were collected, task participation and social orientation. Task participation referred to whether or not the child was participating in the activity. Since 18 observations were made per games session, scores could range from zero to 18. Social orientation referred to the type of social behavior which the child exhibited every tenth second. The observer could select one of four mutually exclusive categories to code the behavior; (a) peer oriented/supportive, that is, behavior toward peers which was socially appropriate (looking, touching, or talking in a neutral way toward playground members) or supportive (smiling at or being helpful toward playground members); (b) uncommunicative/ignoring, that is, behavior toward playground members which was uncommunicative (not looking, touching, or talking to playground members) or ignoring (looking away, turned away from playground members); (c) uncooperative/rejecting behavior, that is, behavior toward playground members which was uncooperative (bullying playground members, hogging materials) or antisocial (name-calling, making mean faces at playground

members); and (d) other, that is, behavior in response to outside noise or distraction. For each games session, the frequency total for each category could range from zero to 18.

Observers

The data collectors were two female graduate students in the Department of Special Education of the College of Education at the University of Florida. The data collectors were trained to be behavioral observers by the researcher during a pre-experimental training period.

Interrater reliability was based on the percentage of total agreements out of the total observations for each of the pre-experimental games sessions during which the observers recorded data on children. At each tenth-second observation point agreement between observers only counted when both assessments of participation and social orientation behavior were in agreement. The two observers were trained to a range of 92%-100% per games session prior to the experiment. The observers were not informed of the peer status of the game participants. One graduate student served as the principle observer of all the children's game sessions and the other graduate student was employed to provide random reliability checks on two different occasions distributed throughout the study. Their percentage of agreements for each play session ranged from 98% to 100% with an average reliability of 99%. The observers' naivete as to the peer acceptance status of the children was verified by post-experimental check.

Post-Experimental Sociometric Assessment

The experimental phase lasted for a period of approximately five weeks. The interval between the end of the experimental phase and the administration of the post-experimental assessment was 20 days. On the 21st day the "play with" sociometric questionnaire was again administered in each of the three fifth grade classrooms by the same person who administered the pretest.

Results

Behavioral Assessment

Behavioral measures were recorded on five of the seven socially isolated children throughout the five-week study. Two of the subjects, R. G. and P. C., were absent so frequently during the baseline phases of the study that it was not possible to evaluate their behavioral data. Only 22 games sessions were conducted instead of the originally planned 25. Three games sessions had to be cancelled due to school schedule conflicts.

As seen in Figures 2-6, application and withdrawal of the games analysis process demonstrated a controlling effect on task participation and supportive behaviors for all five of the subjects. During phases B1 and B2 there was a marked upward trend in task participation and supportive behaviors when contrasted with the immediately preceding baseline phases. In addition, institution and withdrawal of the games analysis process demonstrated a controlling effect on uncommunicative and uncooperative behaviors for four of the five subjects. During phases B1 and B2 there was a marked downward trend in uncommunicative

and uncooperative behaviors for four of the subjects. Because S. S. (Figure 5) did not emit any uncooperative behaviors and M. S. (Figure 6) did not emit any uncommunicative behaviors during the experiment, no conclusion as to the experimental reliablility of the treatment's effect on these dependent measures could be made.

Insert Figure 2 about here

Insert Figure 3 about here

Insert Figure 4 about here

Insert Figure 5 about here

Insert Figure 6 about her

Sociometric Assessment of Socially Isolated Games Participants

Pre- and post-sociogram data were analyzed in terms of mean ratings on the "play with" scale and child's median rank among classmates of the same sex on the "play with" scale. Sociogram mean ratings could range from a low of 1.0 to a high of 5.0. The socially isolated children's

mean ratings and median rank on the pre- and post-intervention sociometric assessment are presented below.

Insert Figure 7 about here

The results on the analysis of the "play with" sociometric ratings at posttest indicated that each of the seven isolated children made positive gains in peer acceptance. The positive gains ranged from + .14 to + .86 with the group's mean gain being + .54. More importantly, each of the seven isolated children achieved sociometric gains in their median ranks among same-sex classmates. The median rank gains achieved ranged from a gain of one rank to a gain of seven ranks with the group averaging a gain of 3.5 rank positions. As a result of these gains only one of the isolated children, R. G., met the definition of being a socially isolated child at posttest (the two least accepted children of each sex in a classroom).

Sociometric Assessment of Socially Isolated Non-Participants

Pre- and post-sociogram data of the socially isolated children who did not participate in the study were also analyzed in terms of the mean ratings on the "play with" scale and the child's median rank among classmates of the same sex on the "play with" scale. The results are presented below:

Insert Figure 8 about here

An analysis of the posttest sociometric ratings indicated that four of the five socially isolated non-participants received higher mean ratings from same-sex classmates at pottest; however, four of these children, D. T., R. J., T. B., and R. R., were ranked at posttest as the least accepted child among same-sex peers in their classrooms. V. B. increased one rank among his same-sex classmates at posttest, but his median rank position still met the study's definition of him being a socially isolated child. Hence, all five socially isolated children who did not participate in the games analysis training remained socially isolated children at posttest.

Discussion

These data allow several interpretations of the findings to be made. First the presence of a functional relationship between institution of the games analysis training and an increase in pro-social behaviors and a decrease in negative social behaviors was established for the subjects of this study. The magnitude of the changes in the dependent measures upon institution of the games analysis training is evidence for the acceptance of this conclusion. In addition to the magnitude of change, the consistency of change provides attitional evidence with which to support the existence of a functional relationship. In essence, this study provides ten replications of the experimental condition, i.e., designing and adapting the games the children played via the games analysis model and, in each case, the changes in the dependent measures were reliable.

Secondly, the sociometric data at posttest indicated that the

games analysis treatment was effective in increasing the isolated children's peer acceptance. The follow-up posttest, administered three weeks after the end of treatment, indicated that the isolated children had moved toward greater inclusion by peers. These data should be considered in light of evidence that activity intervention does not produce lasting change in isolated children's peer status for periods greater than two weeks (Gottman, 1977; Lilly, 1971; Rucker & Vincenzo, 1970). Apparently, games analysis training is effective in creating more lasting effects.

A number of findings were derived from the data in this study which may have paractical implications for others involved in either applied research or practice in this area. First, practicioners should be made aware of the potential of games analysis training as a treatment tool for socially isolated children. In addition, physical educators and elementary school teachers should reevaluate the role of games in their physical education curriculum in light of the relationship between game designs and change in behaviors of children.

Second, games analysis training in the present study was designed to be used in the schools. Intervention research and applications should be conducted in ways that do not stigmatize children. Too often treatment practices for children with social or emotional deviance lead to segregating them from their classmates. In the present research, for example, many nonisolated as well as isolated children left the classroom to participate. Post-experimental interviews indicated that none of the children had connected the sociometric assessment with the games sessions.

Finally, the games analysis intervention is an accountable treatment method. Games analysis provides the teacher with a tool to identify specific behaviors and to teach to those same behaviors.

This study was the first investigation into the efficacy of games analysis training as a procedure to increase the acceptance and adjustment of isolated children. As such there are a number of areas that deserve further investigative effort. Future studies should employ instructors who are blind to the purpose of the study. In the present study the researcher served as the instructor of the games analysis training. Although a conscientious effort was made to avoid experimenter bias, it may be that the instructor was more enthusiastic and/or attentive during the treatment phases.

Finally, future intervention research should include long-term follow-up sociometric assessment and behavioral observations. From the follow-up sociometric data of this study, it may be concluded that games analysis training can make a lasting contribution to children's peer acceptance.

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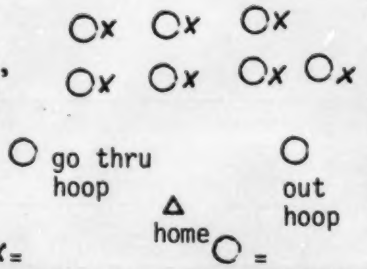
Game: Hula Hoop Softball

Players	Equipment	Movements	Organizational Pattern	Purpose
7/team	10 hula hoops, 6 different types of balls, 4 types of striking implements	running, hitting, catching, throwing		To develop running, hitting, catching, throwing skills. To promote team strategy.

Limitations:

1. Time limit game--batting team up for 2 minutes only.

2. How to make an out; the only way to make an out is to perform specific tasks as fielders, return ball to out hoop before batter crosses home.

3. Batter's job--hit ball of choice, batter runs to "go thru hoop" (60' from batting tee), holds hoop perpendicular to floor; rest of teammates must run through the hoop; all these players must then run and cross home plate.

4. Fielder's job--after the batter hits the ball, one player retrieves the ball, rest of players stand inside hoop--throw the retrieved ball to six different players; if the ball is dropped, start the count all over again--person receiving the sixth throw runs the ball to the out hoop.

5. If the filding team gets the ball to the out hoop before everyone on the batting team has crossed home plate, and out is registered.

Figure 1

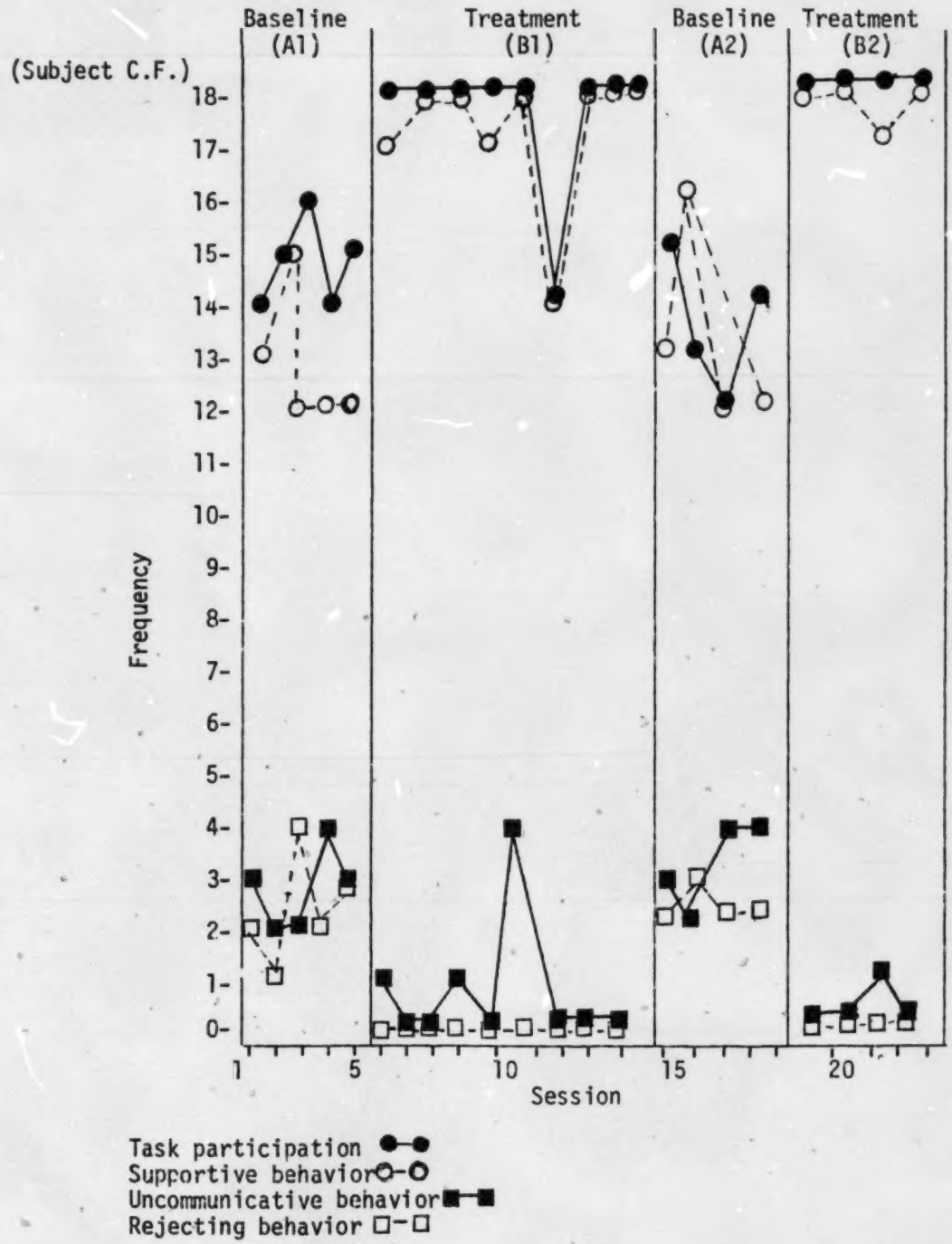


Figure 2

Occurrences of Various Pupil Behaviors
In Relation to Games Played

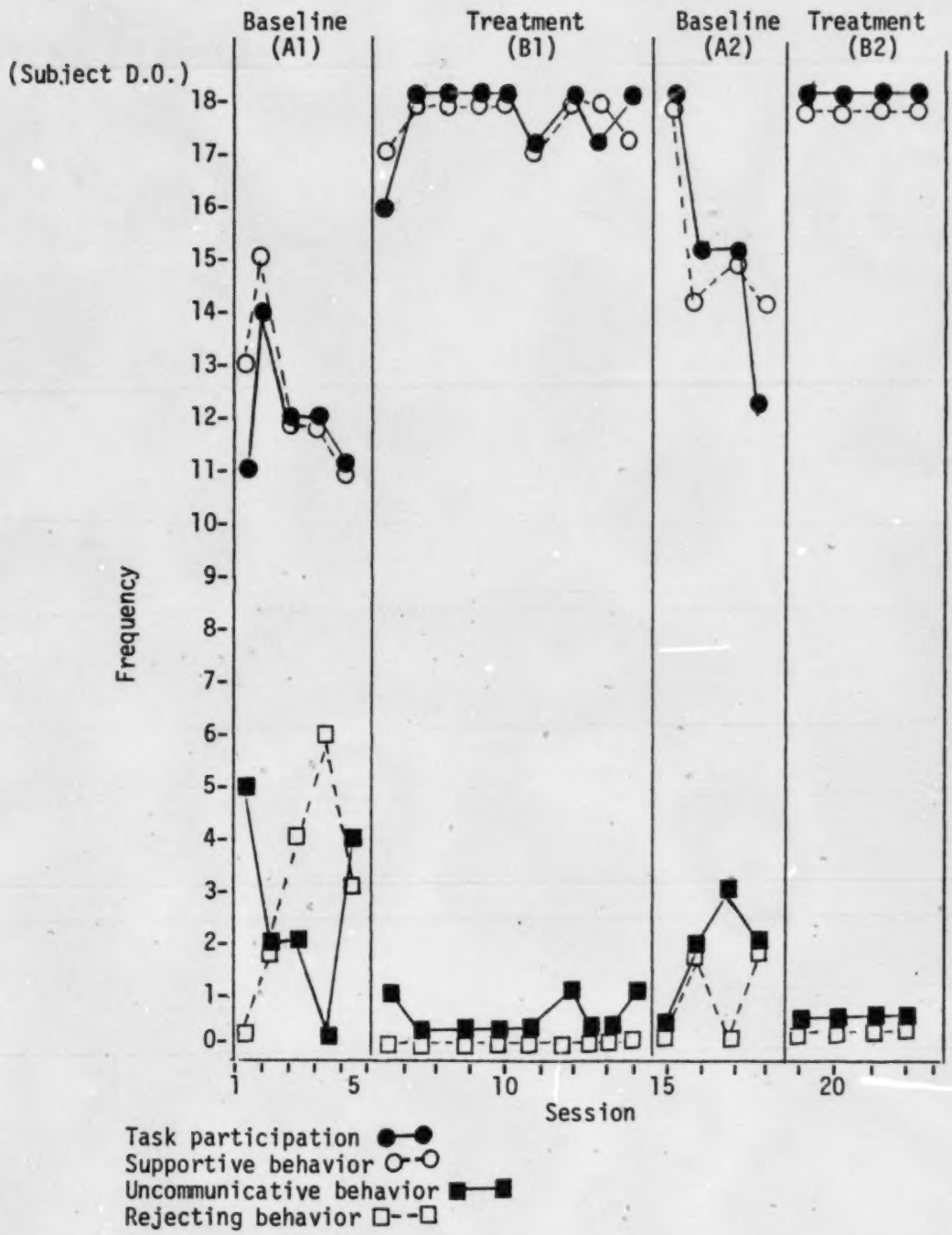


Figure 3

Occurrences of Various Pupil Behaviors
In Relation to Games Played

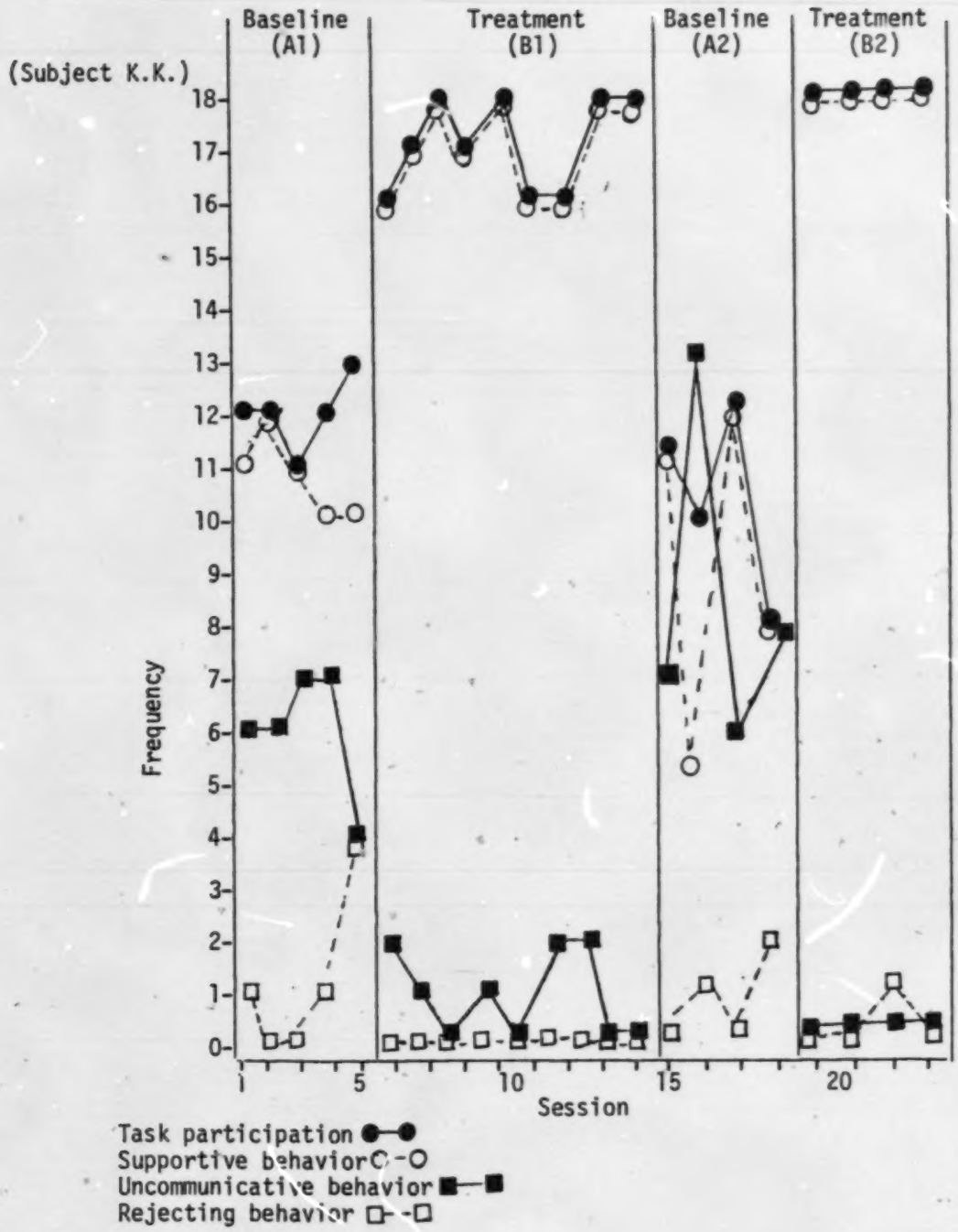


Figure 4

Occurrences of Various Pupil Behaviors
In Relation to Games Played

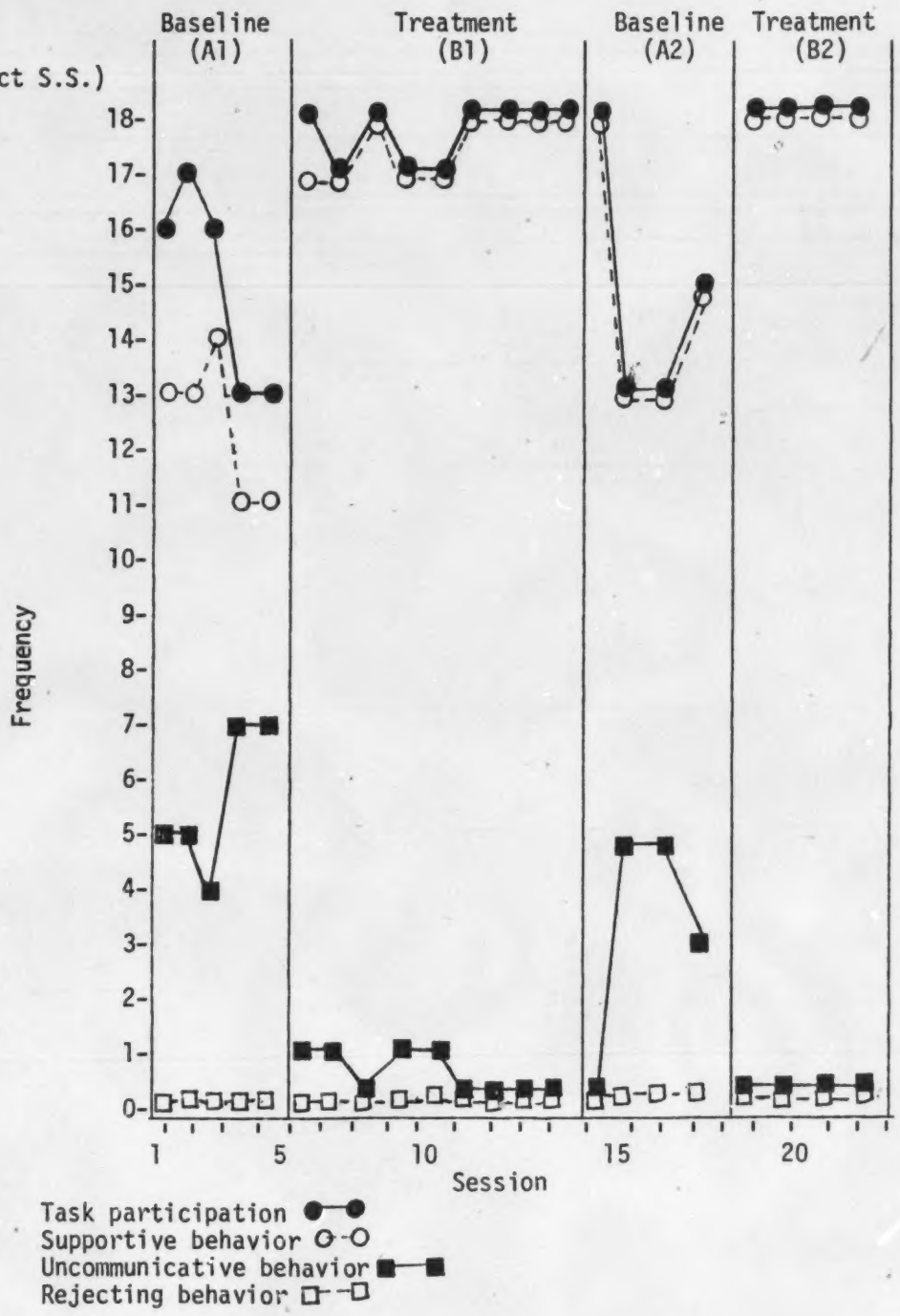


Figure 5

Occurrences of Various Pupil Behaviors
In Relation to Games Played

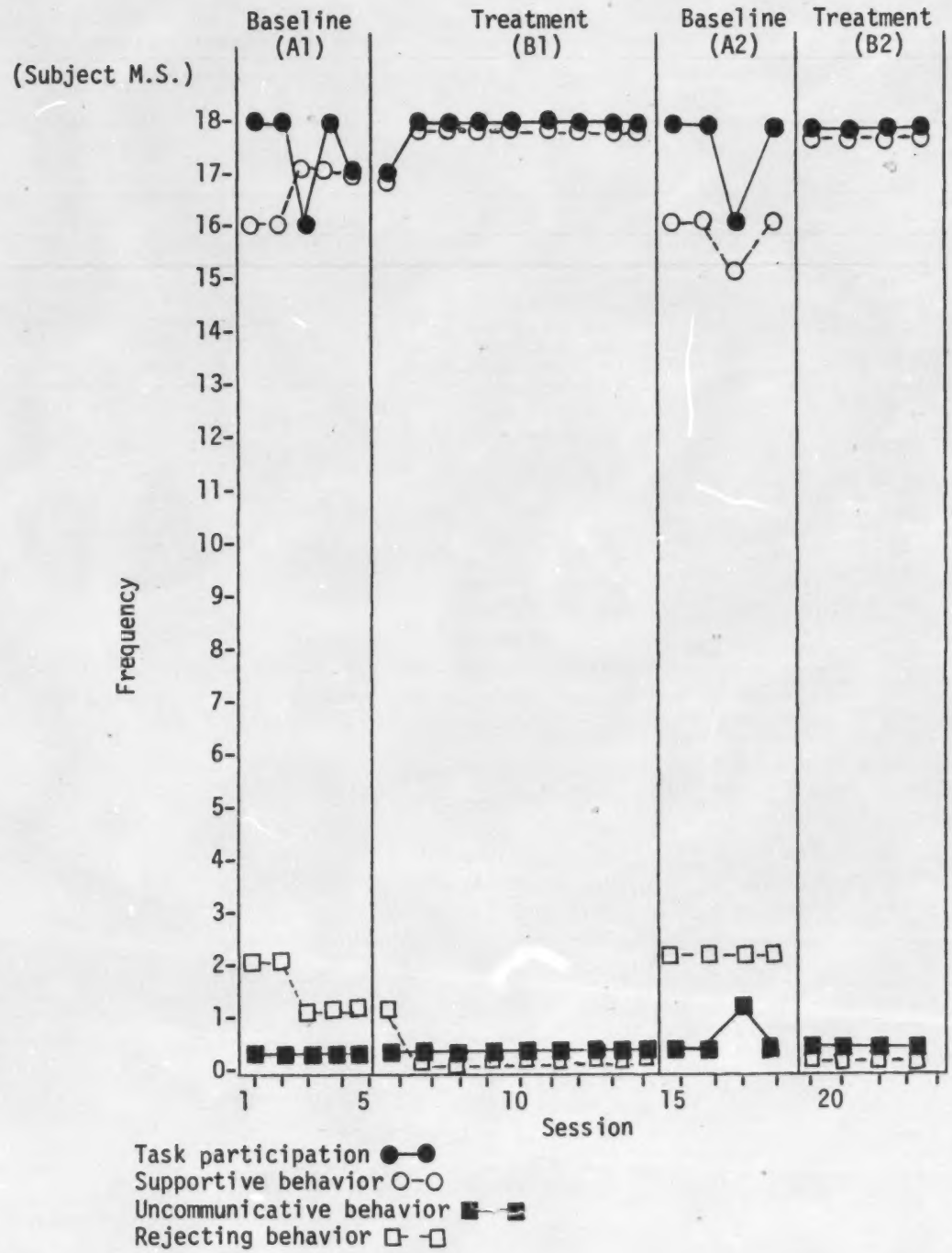


Figure 6

Occurrences of Various Pupil Behaviors
In Relation to Games Played

Subject	Pre Intervention X	Post Intervention X	Net	Pre-Median Rank Among Same-Sex Classmates	Post-Median Rank Among Same-Sex Classmates
C.F.	1.94	2.31	+.37	16th	14th
D.O.	2.78	2.92	+.14	16th	14th
K.K.	2.43	3.29	+.86	17th	10th
S.S.	2.45	3.38	+.83	14th	8th
M.S.	2.70	3.18	+.48	15th	9th
R.G.	1.65	2.16	+.51	20th	19th
P.C.	2.33	2.94	+.61	17th	15th

Figure 7

Subject	Pre Intervention X	Post Intervention X	Net	Pre-Median Rank Among Same-Sex Classmates	Post-Median Rank Among Same-Sex Classmates
V.B.	1.92	2.28	+.34	17th	16th
D.T.	2.62	2.71	+.09	16th	17th
R.J.	1.85	2.11	+.26	19th	20th
R.R.	2.13	2.47	+.34	18th	18th
T.B.	2.81	2.46	-.35	13th	14th

Figure 8